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ABSTRACT

This study skills curriculum addresses the problem of a lack of study skills demonstrated by students in grades 7-10. It focuses on 11 essential knowledge acquisition skills: (1) motivation and ice-breakers; (2) outlining and mapping; (3) time management; (4) PQ5R (Preview, Question, Read, Record, Recite, Review, and Reflect); (5) notetaking; (6) basic logic; (7) test-taking strategies; (8) graphic skills; (9) word roots and dictionary skills; (10) library skills; and (11) critical thinking skills. Brief discussions are offered on evaluative techniques and resource materials. (JD)

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STATE OF LOUISIANA
DEPARTMENT OF EDUCATION

DYNAMICS OF EFFECTIVE STUDY

Bulletin 1825
1987

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STATE OF LOUISIANA

DEPARTMENT OF EDUCATION

DRAFT

DYNAMICS OF EFFECTIVE STUDY

Bulletin 1825

1987

Thomas G. Clausen
Superintendent

FOREWORD

The history of mankind is permeated with man's continuing quest for knowledge. Today's youth are experiencing an unbelievable knowledge explosion, particularly in science and technology.

Teachers have always taken pride in teaching this rapidly increasing information and the basic concepts of their disciplines to the students in their classrooms. Today, however, with the catapulting increase in knowledge in all disciplines of the school curriculum, it becomes more and more essential that our students comprehend not only the subject matter for which they are held accountable, but also some knowledge of the sources of this increasing information. Further, individual classroom teachers have the responsibility of helping their students to acquire the necessary study skills for using these sources of information.

All classroom teachers must share the responsibility of teaching study skills. Each teacher has the responsibility of providing his students with information on the effective use of both the textbooks and other sources of information used in his subject matter area(s).

It is the intent of this guide to provide the classroom teacher with information that will help his students "learn how to learn." Secondary students must be taught these study skills that will enable them to become effective, well-organized, and self-directed learners. The mastery of the study skills contained in this guide will enhance the students' potential for success.

Thomas G. Clausen

Thomas G. Clausen, Ph.D.

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The curriculum guide for Dynamics of Effective Study was written by a committee of secondary teachers of English and Central Office staff supervisors under the direction of Mr. Chiniche and Mr. Coats. These educators deserve special commendation for the quality of this guide which will enhance the study skills of those students who elect to take this course. Special appreciation is given also to Mrs. Gaynelle Faler, staff member, Bureau of Curriculum, Inservice, and Staff Development for her assistance in the development of this document.

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INTRODUCTION

The Louisiana State Board of Elementary and Secondary Education mandated the development of a course entitled Dynamics of Effective Study to help students better prepare themselves in all disciplines in July, 1987. This course is an outgrowth of concern shown by principals, teachers, and other school personnel over the lack of study skills demonstrated by students in Louisiana. Dynamics of Effective Study addresses this problem by focusing on eleven essential knowledge acquisition skills. The course has been designed for grades 7-10 with the materials adaptable to the range of students' abilities.

RATIONALE

Education, ideally, addresses the needs of the society that it serves. In some cases the needs are obvious and the curriculum is easily designed. Mathematics, biology, and English, as such, are clearly needed and are already incorporated into our education system. It takes years to develop the student's proficiency in each of these disciplines. But what of the small needs, the needs that are discovered daily? They are too small for an entire course, or they are interdisciplinary.

This course, Dynamics of Effective Study, attempts to incorporate these small yet needed skills into a thoroughly rewarding course for students in grades 7-10. It is believed that students in this range are old enough to appreciate and master the skills. However, the students in grades 7-10 are not too far advanced to make the absence of these skills a detriment to learning.

Because of the need for proficiency in several areas, Dynamics of Effective Study covers a wide variety of topics, most of which are applicable to several, sometimes all, content areas. This course allows the content area teacher to enrich, adapt, or support skills such as outlining and test-taking, rather than to take valuable time from his subject matter to introduce them.

It was discovered while developing Dynamics of Effective Study that several desired and meaningful objectives are repeatedly supported and nurtured. On the page which follows is a feature analysis depicting the threads that run throughout the course. Such is the synergy created by a composite course like Dynamics of Effective Study.

FEATURE ANALYSIS

	Organizes	Follows Directions	Extracts Topics (Main Idea)	Prioritizes	Interprets Information	Finds Patterns	Saves Time	Improves Grades	Thinks Clearly	Thinks Creatively	Shows Memory Improvement	
Critical Thinking		X		X	X			X	X	X	X	
Dictionary/Root Words					X	X		X		X	X	
Graphic Skills		X	X		X	X		X	X	X		
Notetaking	X		X	X			X	X			X	
Library Skills	X		X			X	X					
Listening Skills		X			X	X		X		X	X	
Logic				X	X				X		X	
Outlining/Mapping	X	X	X	X		X	X			X	X	
PQ5R	X	X	X	X			X	X			X	
Test Taking	X	X		X	X		X	X	X		X	
Time Management	X			X			X	X		X		

x

PACING CHART

The following pacing chart contains suggested periods of times to devote to each major topic in this curriculum guide. Because students learn at different rates and available teaching time during the school year is affected by many other variables, this pacing chart is based on sixteen weeks of school. The remaining two weeks may be used as the teacher thinks best. Ample optional and supplementary materials are included for enrichment.

	TOPIC	NUMBER OF DAYS/WEEKS
I.	Motivation and Ice-breakers	1 week
II.	Outlining and Mapping	1 week
III.	Time Management	2 days
IV.	PQ5R	1 week
V.	Notetaking	3 days
VI.	Basic Logic	2 weeks
VII.	Test-Taking Strategies	3 weeks
VIII.	Graphic Skills	1 week
IX.	Word Roots and Dictionary Skills	2 weeks
X.	Library Skills	2 weeks
XI.	Critical Thinking Skills	2 weeks
		16 weeks

I. MOTIVATION AND ICE-BREAKERS

I. MOTIVATION AND ICE-BREAKERS

This unit should motivate students into thinking seriously about things heretofore taken for granted. The good student will benefit as well as the poor student. Some students will increase their knowledge significantly, while others will merely fine-tune skills already possessed. In this unit, students will be introduced to such skills as organization, listening, observation, concentration and brainstorming, which will be touched upon in every unit in this course.

CONTENT OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
A. Motivation		
1. Goals of Course a. Effective Study b. Organization c. Practicality	1. Lists goals of course.	1. Discuss motivation in general and as it applies to the course. Explain how motivation adds to performance. Discuss goals of course.
2. Expectations a. Open-mindedness b. Participation c. Active thinking	1. Lists what is expected of him in this course.	1. Discuss what is expected of the student.
B. Ice-breakers		
1. Organization	1. Analyzes code to determine pattern of organization.	1. Describe "Tic-Tac-Toe" code and ask students amount of time needed to memorize. Upon receiving suggested learning times, "solve" code.
2. Listening a. Directions b. Facts	1. Demonstrates abilities to listen to directions and to determine facts from a lecture (story).	1. Create a set of instructions for a simple drawing task (e.g.,draw circle, draw small box inside circle in center, draw line at top of page, turn over paper, draw "Z"). 2. Relate a short lecture or story and ask the students to list people's names from story, repeat story and ask for list of dates or times, finally, list places.
3. Observation	1. Identifies from memory three changes in partner's appearance.	1. Have students pair off and face each other. After 10 seconds, have students turn back-to-back and change three items, e.g., take off glasses, untie shoe, change wrist of watch. After change-time, have students determine partner's changes as partner does same.

CONTENT OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
4. Concentration	1. Assesses his own concentration and takes steps to improve.	1. Take a survey to determine what students believe facilitates concentration and what detracts from it. 2. Have students (players), two at a time, face each other in front of class. Players will converse <u>simultaneously</u> for as long as concentration continues, that is, until one player stops talking for a perceptible period of time. 3. Variation of above--two players dialogue only in questions. No declaratives are allowed. The loser is the first player not to ask a question.
5. Brainstorming	1. Uses a method of shared problem-solving in which all members spontaneously contribute ideas.	1. Offer problem situation to class and elicit lists of possible solutions or options. May be done individually or in group, may be timed or untimed. "Tic-Tac-Toe Code" Draw the following on the board: A = ⌐ B = ⊓ C = L D = ⌐ with bar E = ⊓ with bar F = ⊓ with bar G = ¬ H = ⊓ with bar I = ⊓ with bar

Ask students how long it would take to memorize the above code.

One hour? One week? Forever?

Explain that, by organizing, one may learn the code in 10 seconds.

Have a timer ready, then write:

A	B	C
D	E	F
G	H	I

Eureka!

II. OUTLINING AND MAPPING

II. OUTLINING AND MAPPING

One of the most important study skills involves getting ready to study, and it is a skill often overlooked. It involves several things: (1) getting an overview of a book, chapter, or course, (2) prewriting as in essays, (3) organizing graphically as with maps or clusters, and (4) outlining chapters using the classic outline. All of these add coherence to what is being studied, show the emphasis in points, and pull the study skills together with the degree of unity that is needed. The student who develops the skill of getting ready to study in-depth is a better prepared student.

CONTENT OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
A. Structured Overview	1. Gets a total picture of the course.	1. Have students look over the syllabus to get a feeling for what will be taught.
	2. Knows the content of each chapter.	2. Let students look over each chapter to know what it contains.
		3. Discuss with students the work or headings which are written in darker print.
B. Classic Outline (Topic Outline)	1. Makes an outline using Roman numerals and adheres to the rules of outlining.	1. Teach basic rules of outlining.
		2. Show students a sample outline for study. Go over the major sections and explain them, pointing out that the classic outline involves phrases rather than sentences.
		3. Give students a basic skeletal outline with the major sections written in. Then have them fill in the rest of the outline from their texts or from an oral presentation.
		4. Have students make their own outlines using the correct form and following the rules of outlining. This may be done first from a text with headings. Then students may outline an expository writing or for further practice, outline an oral presentation.
		5. Allow students to organize their test materials by organizing them in outline form.

CONTENT OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
C. Mapping		
1. Organizing data in such a way that the student can see clearly how ideas are linked together 2. Summarizing in an organized way 3. Placing or arranging information in graphic or picture form 4. Picturing of information	1. Demonstrate how the parts of a whole relate by grouping together thoughts and organizing them according to their relationships. This can be done in all content areas, in prewriting, and in organizing words to be studied.	1. Have students read a selection, and choose the one word or phrase that summarizes the selection. Put the word in a circle in the middle of the page; draw other circles around the center and then add words which relate to the word or phrase in the middle. They may draw lines to show this relationship. 2. Have students read a selection and take notes. From their notes have students group their main thoughts in clusters around the title. This allows students to organize their notes in a graphic way. 3. Give students a skeletal chart with a list of items and topics to be inserted in the chart. Students may select a topic from a contact class and make a flow chart for it.
D. Map Appearance		
1. Looks like a road in that it provides a complete picture of selected material 2. May consist of different kinds of geometric shapes connected by lines to show relationships to each other according to importance		

CONTENT OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES

E. Steps in Mapping

1. Reading selected material carefully to find the main idea or topic

2. Finding the main ideas, organizing and categorizing them

3. Looking for details to support the main ideas and using enough details to help recall the main points of the material

F. Assistance from Mapping

1. Helps us to organize our thoughts, notes, text, tests, etc.

2. Helps us to remember or retain data better and perhaps longer

3. Helps us see how parts of a topic relate

4. Makes information easier to study

5. Makes reviewing notes much easier

6. Saves time in preparing for tests, writing, and studying in general

CONTENT OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES

G. How does one make a map?

1. Follow steps in map making

2. Determine topic

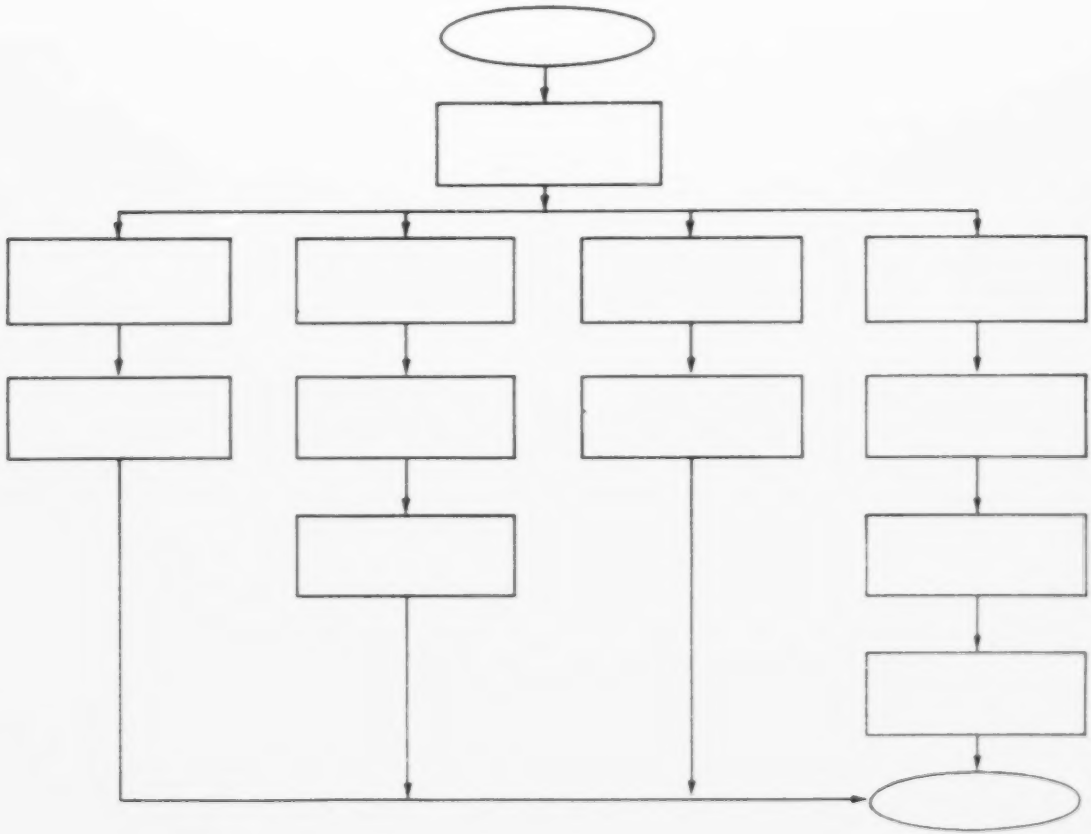
3. Find the main ideas

4. Support the main ideas with substantial details

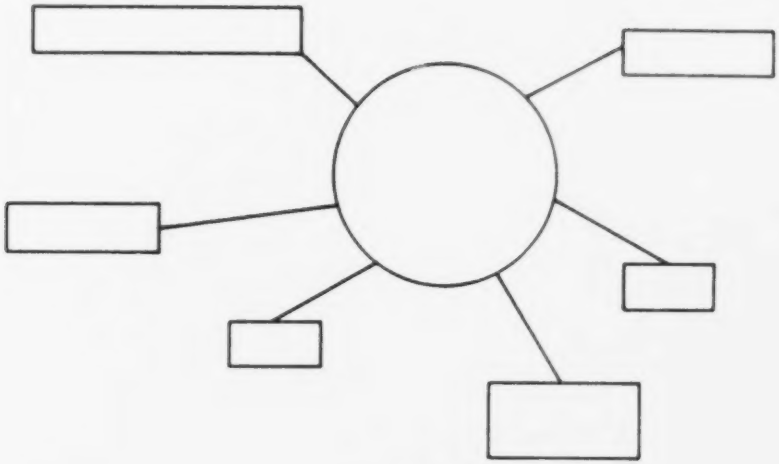
II. OUTLINING AND MAPPING RESOURCES

Give the student a copy of a flow chart used to classify information; use information relevant to student's classes.

EXAMPLE:



Your map should look something like this one.



III. TIME MANAGEMENT

III. TIME MANAGEMENT

A recurring comment is "I never have enough time to do all of my work." This is not only fallacious but very far from the truth. Consider the following description of a typical week:

24 hour/day x 7 days	=	168 hrs/week
7 hr/day of school x 5 days	=	-35 hrs/week
		133 left
8 hr/day of sleep x 7 days	=	-56
		77 left
2 hrs/day of study x 5 days	=	-10
		67 hours

This breakdown illustrates that 67 hours per week are left for free time, which averages to about 9.6 hours of free or unencumbered hours per day. If a person is organized and has planned the use of his time wisely, he will have sufficient time to do anything he wishes. In this section the scheduling of a weekly calendar and a monthly calendar is examined. The monthly calendar will help in the management of long-term assignments. The weekly calendar will facilitate the daily tasks with which one is faced.

CONTENT OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
A. Daily Schedule	1. Identifies the amount of obligated time and spare time within the framework of one day.	1. Fill out a daily schedule of all activities from 6 a.m. to 11 p.m.
B. Weekly Schedule 1. Obligated time 2. Homework time 3. Spare time	1. Identifies the amount of obligated time, homework time, and spare time within the framework of one week.	1. Fill out a weekly schedule by filling in obligated time such as school, church, and meals, etc. Fill out homework time and spare time. (Note that these schedules should and must be flexible.)
C. Monthly Schedule	1. Identifies long-term activities beyond one week.	1. Fill out a monthly schedule. This would include extracurricular activities, long-term assignments, and social activities.

III. TIME MANAGEMENT RESOURCES

STUDENT SCHEDULE

TIME	SUN	MON	TUE	WED	THU	FRI	SAT
6–7 am							
7–8:30							
8:30–9:30							
9:30–10:30							
10:30–11:30							
11:30–12							
12–1 pm							
1–2 pm							
2–3 pm							
3–4 pm							
4–5 pm							
5–6 pm							
6–7 pm							
7–8 pm							
8–9 pm							
9–10 pm							
10–11 pm							

OCTOBER 1987

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
NOTES:				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

IV. PQ5R

IV. PQ5R

The most up-to-date and effective method for textbook notetaking, PQ5R, will improve the quality of and will reduce the amount of time necessary to complete reading/studying/homework. Using PQ5R, a student will need to put in less time to maintain a high grade. PQ5R saves the student from having to reread the whole chapter the night before a test. When PQ5R is used with notetaking (Unit V), the student will feel much more comfortable about taking notes.

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
A. General Considerations 1. Method for notetaking 2. Use of summary paper (1/3-2/3 format) 3. Review of chapters 4. Improvement of efficiency	1. Identifies the use of PQ5R and special paper needed for this process.	1. Describe PQ5R as a method for use with texts; explain that this process uses summary paper; distribute samples or have students draw line 1/3 of the way on conventional paper.
B. Method and Foundations 1. Preview a. Knowledge covered b. Enjoyment of pictures, diagrams, etc. c. Skimming for clarification	1. Explains method and purpose of previewing material.	1. Have students demonstrate with sample text methods of previewing. 2. Using a road map, have students show that they understand that previewing is analogous to using a road map. How do you know you've arrived, unless you know where you're going? 3. Ask a student to preview while "thinking out loud."
2. Question a. Finding headings b. Phrasing them in form of question c. Copying question on left side of summary paper, leaving room for answers on the right d. Repeating process for each chapter heading	1. Converts headings into meaningful questions.	1. Select random headings from a variety of subjects and levels and ask the students to rephrase them in the form of a question.
3. R1: Read a. Learning the purpose for reading (to answer question) thereby increasing effectiveness b. Extracting enough information (main idea) to answer c. Repeating all questions	1. Extracts answers to questions at hand from a reading text.	1. Read short segments from text associated with headings that the teacher has "questioned" and after each, ask students to summarize the information into a complete answer to the question. 2. Discuss whether student answers satisfy the requirements of the question completely.

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
4. R2: Record a. Writing down answers to questions on right side of summary paper b. Repeating for all answers	1. Arranges items on summary paper in an organized and easy-to-read form.	1. Ask students to show sample pages of PQ5R chapters in different content areas. 2. Ask the students which textbooks they use would be easiest to convert into PQ5R. Why so? Hardest? Why so?
5. R3: Recite a. Saying aloud the answer as it is being written b. Increasing probability of material remaining in long-term memory or short-term memory	1. Explains how recitation increases memory for STM and LTM.	1. Invite a psychologist or counselor familiar with memory enhancement to distinguish Short Term Memory from Long Term Memory, as well as to offer techniques (PQ5R included) to enhance STM and LTM.
6. R4: Review a. Skimming notes each day b. Reduces time used the night before a test to "cram" c. Increases STM and LTM	1. Explains reasoning behind short reviews each day, as preferred to "cramming."	1. The material for this objective is covered in activity above.
7. R5: Reflect a. Double checking (1) How does this influence me (2) Applies where (3) Seen previously (4) Applied to previous knowledge (5) Agreement b. Increases probability of LTM retention	1. Lists possible questions that show material's relationship to the student.	1. Relate material already covered to students and ask why they remember it. If they do not remember, try to relate it now. 2. Ask students why they remember telephone numbers? (recipes, eye color, football plays, etc.)

V. NOTETAKING

V: NOTETAKING

One of the most effective methods of notetaking is the Cornell method. This method requires that the student either buy note summary paper or simply divide the page of notepaper into two columns, with the line 1/3 of the way from the left hand side of the page. The notes taken from whatever source--lecture, board, or overhead are placed in the larger column or the NOTES column. Later, the student reviews the notes and places key words or phrases in the narrower column called the MAIN IDEA column. This builds, almost automatically, a convenient study tool; it allows for transition from the notebook to study cards and helps students learn to fill in other information.

Everyday's entries are dated. Besides this, any information, problems or questions from the textbook is identified with the page number from the book. Problems are numbered exactly as they are in the textbook.

Shown on the page which follows is a short sample of some lecture information using this method.

SMOKING

MAIN IDEAS	NOTES
	Dangers of smoking
What parts of the cardio-vascular system are affected by smoking?	1. Cardio-vascular disease a. Heart b. Lung cancer c. Emphysema d. Arteriosclerosis
How does smoking affect the human fetus?	2. Pre-natal problems a. Low birth weight b. Congenital defects c. Chronic respiratory problems
	Benefits of quitting smoking
What are the major benefits of not smoking?	1. Health reasons a. Increased lung capacity b. Reduced cardio-vascular risk c. Reduced heart rate 2. Economic a. Increased taxation b. Personal savings 3. Social a. No longer socially acceptable b. Limitations on smoking areas

SUMMARY: Smoking is no longer as socially acceptable as it once was. There are many reasons for this change. Smoking is a health hazard that affects not only the lives of smokers but also the lives of non-smokers. The human fetus is adversely affected within the womb of its smoking mother. There are major benefits also attached to not smoking; some of these benefits include health, economic, and social benefits.

COURSE OUTLINE	STUDENT OBJECTIVE	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
A. Cornell (1/3, 2/3) Notetaking System (Summary Notetaking)	1. Identifies pertinent information from teacher models and extracts main ideas. 2. Will design questions based on the main idea.	1. Have a guest lecturer present an outlined lecture. Students will record the lecture using the Cornell notetaking system and then extract the main ideas and formulate a summary statement.
B. Extracting Main Idea 1. Cues 2. Key words/phrases	1. Will be able to distinguish material mastered from material yet to be mastered.	1. The teacher will select one or two paragraphs from a science or social studies text. The students will read the material and then record notes using the Cornell notetaking method. 2. The student will take notes (in one of their academic classes) using the Cornell notetaking method. They will extract the MAIN IDEA and summarize.

V. NOTETAKING RESOURCES

2½ 6

MAIN IDEAS NOTES

SUMMARY:

2½

6

MAIN IDEAS

NOTES

SUMMARY:

VI. BASIC LOGIC

VI. BASIC LOGIC

There is little evidence that students become "good thinkers" as a consequence of studying conventional materials; hence, students must be placed into situations which challenge them to do "good thinking." An introduction to formal thinking is necessary if students are to acquire those skills needed for distinguishing valid from invalid inferences, to understand the difference between reasoning and rationalizing, and to understand the idea of degrees of belief.

The Cartesian dictum of Cogito, ergo sum... "I think, therefore I am"... is insufficient if one reasons logically that thinking in and of itself is not a consequence of existence; however, one cannot argue against the logic that thinking is a consequence of being human. Cogito, ergo sum...Cogito?

COURSE OUTLINE	STUDENT OBJECTIVE	ACTIVITIES TO ACHIEVE STUDENT OBJECTIVES
	The student:	
A. Introduction 1. Developing an "open mind" a. Plato's Idealism (1) "Parable of the Cave" (2) Concept of reality (3) H. G. Well's "Country of the Blind" b. Aristotle's Realism (1) Golden Mean (2) Concept of reality (3) Syllogisms 2. The need for logic	1. Reads Plato's "Parable of the Cave" from the Republic. 2. Discusses the attributes of an open mind. 3. Reads H. G. Well's "Country of the Blind." Draws parallels between the two stories read. 4. Demonstrates an understanding of Aristotelian logic. 5. Forms a basic syllogism and critiques sample syllogisms for validity.	1. Have the students read "Parable of the Cave." 2. Discuss "openmindness." What is required? 3. Have students read "Country of the Blind."
B. Exercises in logic 1. Symbolic a. The "And" conjunction b. The "Or" conjunction c. The "If...Then" conjunction d. The "Not" prefix 2. Necessary/Sufficient conditions 3. Logic Problems 4. Puzzles	1. Constructs truth tables for the "Or," "And," and "If...Then" conjunctions. 2. Defines necessary and sufficient as applied to conditionals. 3. Determines whether statements are true or false based on the use of symbolic logic. 4. Solves puzzle using skills and insights developed in this unit.	

VI. BASIC LOGIC RESOURCES

Have the students read Plato's "Parable of the Cave" (Republic) to create the mood or mind set required for the students to begin their journey into the world of logic. Students can be introduced to the meaning of such terms as "parable" and "allegory" in order to understand that each item within the writing is symbolic. After oral reading of the parable, discuss the major symbols found therein.

For example, the following must be recognized as having symbolic meaning:

Cave	= the world in which we live
Outside World	= the world of Ideas, i.e., reflections of true reality
Chains/fetters	= our beliefs/what is taught as "truth"
Shadows	= what we perceive as reality
Fire	= the false light which creates our reality
Wall	= barrier to discerning truth
Sun	= the IDEA, i.e., TRUE REALITY

After discussing the necessity of developing an "Open Mind" for distinguishing our beliefs from what might be, have the students read H. G. Well's short story "The Country of the Blind." Discuss student reactions to the story and ask "What parallels are there between Plato's parable and this short story?" List these on the chalkboard.

Aristotelian logic can easily be introduced to acquaint students with categorical syllogisms, i.e., "If... then...therefore."

Example:

(If) Premise:	All outlaws have red hair.
(Then) Fact:	Jesse James was an outlaw.
(Therefore) Conclusion:	Jesse James had red hair.

Discuss the weaknesses inherent in such simplistic logic.

Write "Everything to moderation. Nothing to excess." on the chalkboard. Use this quotation to introduce Aristotle's concept of the "Golden Mean." On the chalkboard draw a chart illustrating the application of the theory.

Attribute	− Deficiency	− Golden Mean	+ Excess

Elicit student offerings until you feel that students understand the concept. Throw out the term "justice" as an attribute. What difficulties are encountered? Do we use such a term too loosely? Give some examples of other such terms, e.g., "beauty," "crazy," etc.

Exercises for symbolic

P = "I eat peas."
Q = "I eat carrots."

State the situation for each set of truth values:

P	Q	PvQ	P·Q	Answers:
T	T	T	T	I ate both.
T	F	T	F	I ate peas, but not carrots.
F	T	T	F	I ate carrots, but not peas.
F	F	F	F	I ate neither.

P: "It rains."
Q: "I pick you up."

P	Q	P→Q
T	T	T
T	F	F
F	T	T
F	F	T

*Symbolize each statement.
Which are true, which false? (You=You!)

1. You have hair or you don't have hair.
2. You are alive and you are not alive.
3. You are not eating and you are not sleeping.
4. If you are a human being, then you are either male or female H - (MvF).
5. If a table is made of wood, then it is hard.
6. A movie is good if it makes you laugh or cry.
7. If I am Napoleon, then you all make an "A."
8. If Louisiana grows economically, then jobs will increase.
9. If today is Saturday, then you are in school.

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*Have students complete the following statement.

1. An "or" statement will be false if and only if _____. (Both P, Q are false)

2. An "and" statement will be true if and only if _____. (Both P, Q are true)

3. An "If...then" statement is false if and only if _____. (P is true, Q is false)

Which are true? Which false? (~ means not)

(true) 1. ~ (New Orleans is the capital of LA.)
(false) 2. ~ (You are old or you are young.)
(true) 3. (Cows give milk.) v ~ (Cows give milk.)
(true) 4. (Cows give chocolate milk.) v ~ (Cows give chocolate milk.)
(false) 5. ~ (It is a dog.) → ~ (It is an animal.)
(true) 6. ~ [~ (It is Christmas Day.) → (We have school.)]

LOGIC PUZZLE

Directions: Read the clues given and determine which were the couples that attended the last dance. Place an "X" in a box that is a definite impossibility, and a "*" in a box that is positively true.

1. Roy doubled with his friend who dated Connie.
2. Brenda met Tom for the first time at the dance.
3. Annie, who does not date Tom, left before Connie and her date.
4. Steve has never dated Brenda.

SOLUTION

	ANNIE	BRENDA	CONNIE
ROY	X	*	X
STEVE	*	X	X
TOM	X	X	*

PROBLEM-SOLVING PROCESS AND STRATEGIES

The world that children will live in as adults will require that they procure the skills to solve problems and to ask good questions. Mathematics should be taught so that mathematical concepts and skills make sense to the student. The emphasis on problems must come first; it is the starting place for developing arithmetic understanding and for establishing the need for computation. The student needs to see that developing computational skills serves a purpose--that computational skills are tools for solving problems.

The problem-solving process for mathematics has been described in a variety of ways, but at least four steps are identified in most models. These are:

1. Reading or understanding the problem
   --the student decides what she/he is trying to find and what information is needed or irrelevant.
2. Devising a plan
   --the student decides what problem-solving strategies are appropriate to use for the problem.
3. Carrying out the plan
   --the student uses selected strategies to compute the answer or solve the problem.
4. Checking the answer
   --the student reviews his/her answer to make sure that it is reasonable and verifies its accuracy.

It is clear from this description of the problem-solving process that mathematics instruction should be directed at teaching students "how to think." Students should be exposed when they are very young to problems that require thinking beyond rote response. To be effective in helping students develop and sharpen their problem-solving skills, teachers should avoid illustrating all of the steps in the solution of numerical exercises. Instead, teachers should present relevant problems and guide students toward solutions rather than tell them the answers.

Asking good questions, for example, helps students go forward toward solutions. Allowing sufficient time for students to solve problems is also important; during this "wait time," the teacher does not talk, but allows students the opportunity to think or talk to one another. In general, students' exploration and discovery of solutions is more useful than passive reception of the answers in learning how to solve problems independently.

Research has shown that the teaching of specific problem-solving strategies greatly improves students' problem-solving abilities and results in dramatic increases in their scores on related tests. Strategies are not specific to particular problems or to particular areas of the mathematics curriculum, but can be applied alone or in combination with other strategies to solve a wide variety of problems. Gaining familiarity with different strategies, seeing them modeled, and then trying to apply them can provide students with useful tools for tackling problems.

Although the list may not be comprehensive, the thirteen problem-solving strategies identified below constitute a good repertoire of strategies that can serve as a basis for solving problems in school and in life.

1. Use common word problem strategies to solve problems.
2. Break problems into parts to solve two-step or multi-step problems.
3. Use trial and error to solve problems (guess and check).
4. Use dramatization to solve problems.
5. Use concrete objects to solve problems.
6. Draw pictures or diagrams to solve problems.
7. Give relevant information, works backwards to solve problems.
8. Look for patterns to solve problems.
9. Construct and uses tables, lists, and charts to solve problems.
10. Solve a similar or simpler problem to help find a solution.
11. Construct and interprets graphs to solve problems.
12. Write simple equations to solve problems.
13. Use logical reasoning to solve problems.

Examples of exercises designed to teach each of these thirteen strategies complete this section.

Suggestions for teaching problem solving.

1. Provide a wholesome emotional climate for problem solving.
2. Teach various problem-solving strategies.
3. Emphasize the method of solution rather than the solution.
4. Encourage experimentation, trial and error, estimation, intuition, guessing and hunches to suggest a method of solution.
5. Expose students to many problems and to varied problems so that they develop flexibility in problem-solving behavior.
6. Provide sufficient time for discussion, practice, and reflection on problems and problem-solving strategies.
7. Have students construct their own problems.
8. Attempt to find the source of the students' difficulty and use various instructional techniques to remove these difficulties.
9. Insist on persistent effort and on concentrated and sustained attention.
10. Provide very frequent short sets of problems on which the students experience absolute success.
11. Promote problem solving through the use of mathematical games and other activities.
12. Have students work together in small groups.
13. Attempt to establish and maintain students' motivation.
14. Show the learner how to ask him/herself questions.

15. Give conscious attention to reading skills.
16. Use problem situations to discover new mathematical concepts, principles, or relationships.
17. Use problem situations as a basis for practice and as a substitute for isolated drill exercises.
18. Model good problem-solving behavior.

VII. TEST-TAKING STRATEGIES

"I don't think much of a man who is not wiser today than he was yesterday"
(Abraham Lincoln)

VII: TEST-TAKING STRATEGIES

Knowing how to take tests and how to use principles of test-taking will not necessarily guarantee success. There is no substitute for knowledge of the subject matter. Therefore, the first step in preparing for a test is to study sufficiently. Most students would agree that the two most important sources of knowledge are the textbook and the classroom lecture. Yet, it is surprising the number of students who do not use either of these sources as efficiently as they might.

CONTENT OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES *
	The student:	
A. Criterion-Referenced Tests 1. Essay tests	1. Will be able to organize his thoughts, and to express himself in a logical, concise, and convincing manner.	1. Discuss the various aspects of "evil" as found in the story The Wizard of Oz.
2. Multiple choice tests	1. Will choose the best or correct response to the question given based on his knowledge of the subject matter.	1. Give a set of multiple choice questions to students. Ask them to use common sense to analyze questions carefully, and look for important words or phrases that can alter the question.
3. True-false tests	1. Will determine what is correct or incorrect by recognizing a stated fact, definition, or identification of a rule.	1. Give a set of true-false questions to students. Ask them to look for key words that might make a statement or question true or false.
4. Matching tests	1. Will match words, phrases, or symbols that correspond from one list or set of choices to another.	1. Give two lists of either facts or rules. Ask students to match or pair each of the words in the first list with a word, symbol, phrase, or sentence in the second list.
5. Short answer tests	1. Will fill in the blank or complete the question by giving the correct word, phrase, number, date, or symbol.	1. Ask students to answer ten questions by filling in the blank with a word, phrase, number, or date.

*See resource section for additional activities.

CONTENT OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
6. Open book tests	1. Will utilize his notes or text to answer selected questions found therein.	1. Students will read the Book of Genesis and answer the following questions: A. Who committed the first sin and why? B. How many days did it take God to create the world? C. How many floods are discussed in this book?
7. Problem-solving tests	1. Will use previous knowledge, logic, and/or analytical skills to interpret, decipher, or solve word problems, algebraic expressions or other symbols that require decoding.	1. Students will solve the following: A VCR is marked 16% off the retail price of$490.00. How much is the sale price?
8. Oral tests	1. Will recall and recite either short or long answers posed by the teacher, recite parts or whole selections of poetry, recite a selected word or phrase of a foreign language.	1. Students will orally answer questions from The Grapes of Wrath. 2. Students will give an oral report on a novel chosen from a set of selected readings.

CONTENT OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES *
	The student:	
B. Standardized Tests 1. ACT 2. SAT 3. PSAT 4. ASVAB 5. AP	1. Will demonstrate the ability to take various standardized tests and use principles of test-taking to achieve his best possible score.	1. Students will be given standardized tests to practice test-taking strategies for each type of test.

*See resource section for additional activities.

VII. TEST TAKING STRATEGIES RESOURCE MATERIAL

A. Criterion-Reference Tests

Criterion Referenced Tests are tests that are teacher-made according to what has been studied. These tests attempt to measure how well the students have achieved the goals the teacher has set for them.

These tests may be objective, oral, or essay. Some general suggestions follow which will help teachers to develop better tests and students to take tests with greater skill.

1. Students

Rule 1: Use your time wisely.

a. Know how long you have to complete the test.
b. Look over the entire test before you start.
c. Set up a work schedule.
d. Work as rapidly as possible.
e. Guess at items which stump you. Make a check mark next to these items so that if time permits you can go back over them.
f. Work fast on those items which will yield the most points in a given amount of time.
g. Use the time remaining after completion of the test to reconsider and improve your answers.

How would you budget your time in the following situations?

Situation 1: The test consists of 40 multiple choice questions and two essay questions worth 20% each. You have one hour and fifteen minutes to complete the test.

Situation 2: The test consists of twenty short answer questions and four problems. You figure the four problems will take somewhat more than half your time. You have fifty minutes to complete the test.

Rule 2: Read directions and questions carefully.

a. Become familiar with test directions ahead of time.
b. Read the directions carefully and underline the important words.
c. Pay particular attention to specific parts of the directions such as time limit, aids, order of answering, number of questions, type of answer required, scoring, and penalizing for guessing.

2. Teachers
   a. Express the item as clearly as possible.
   b. Choose words that have precise meaning wherever possible. Avoid--some, many, few.
   c. Avoid complex or awkward word arrangements.
   d. Include all qualifications needed to provide a reasonable basis for response selection.
   e. Avoid the inclusion of nonfunctional words in the item.
   f. Avoid nonessential specificity in the stem or the responses.
   g. Avoid irrelevant inaccuracies in any part of the item.
   h. Adapt the level of difficulty of the item to the group and purpose for which it is intended.
   i. Avoid irrelevant clues to the correct response.
   j. In order to defeat the rote-learner, avoid stereotyped phraseology in the stem or the correct response.
   k. Avoid irrelevant sources of difficulty - grammatical structure, e.g., exert (stem) pressure.

l. Essay Tests

An essay item is a test question that asks you to explain, discuss, summarize, or outline a topic. It must be done in sequence to be sensible. It asks for a much longer answer than an objective-type test item. It cannot be scored with an answer key.

a. Students

Your answers will show how well you know and understand the material. You must prepare very carefully for essay tests. You are going to have to recall a lot of information from memory and organize it into paragraphs.

Read all the items, jotting down the points that occur to you beside each question. Be sure you understand the question and what you are to do before beginning.

(1) Organize your answer before writing.
(2) Answer in outline form if time does not permit a complete answer.
(3) Write to the point and don't be "wordy." Begin a new paragraph for each point.
(4) Write legibly. Be sure of spelling.
(5) Check all punctuation and proofread thoroughly.

b. Teachers
   (1) Prepare the students by giving definitions of key terms such as those listed below.
      (a) Contrast: Show the differences between.
      (b) Trace: Follow development in sequence.
      (c) Explain: Describe, analyze, and attempt to find causes.

(d) Illustrate: Provide a verbal answer (example) or provide a figure, picture or diagram.
(e) Outline: Find main headings and subordinate points and state briefly.
(f) Enumerate: State point by point.
(g) Criticize: Form an educated opinion and analysis, pro and con.
(h) Evaluate: Determine the value of something. Analyze the opinions of experts and form your own opinion or personal view.
(i) State: Give factual answers in short, clear sentences; be concise.
(j) Prove: Demonstrate truth by citing factual or logical evidence.
(k) Discuss: Provide careful analysis, both subjective and objective.
(l) Diagram: Illustrate with a graphic answer.
(m) Describe: Paint in a clear and vivid language something in your own words.
(n) Compare: Show the similarities and/or differences.
(o) Define: Relate in a clear and concise statement the dictionary meaning.
(p) Relate: Look at the total picture and group all ideas according to their relationships to each other.

(2) Remind Students:
(a) Help students organize an essay answer by having them outline or jot down points to be covered.
(b) Show students examples of illustrations and/or ideas to be covered.
(c) Tell students the difference between elaboration and padding.
(d) Tell students if you want complete sentences, correct spelling, etc..
(e) Remind students to proofread answers.

2. Multiple Choice Tests

One type of objective question is the multiple choice question. A multiple choice question usually consists of an incomplete statement followed by some possible answers. The incomplete statement is called the "stem" and the choices are called "distractors."

a. Students
(1) Read the stem. Then determine the answer before looking at the choices.
(2) Be sure to read all choices. Don't jump to obvious conclusions; they may only be obvious on the surface.
(3) Look for words that can alter the question. Such words are not, best, most important, primarily, first, last, main, except, and all but one.
(4) Use information from other questions to help answer those you are unsure of.
(5) Keep in mind that first impressions are most generally correct.

(6) Look for the following characteristics in a poorly constructed test item. (Generally the correct choice will be longer than the incorrect choices, will not be one of the extremes of a set of choices, will be the only grammatically perfect extension of the question itself, and will not contain such extreme words as nonsense, foolhardy, harebrained, etc.)

b. Teacher

(1) Use either a direct question or an incomplete statement as the item stem.
(2) In general, include in the stem any words that must otherwise be repeated in each response.
(3) If possible, avoid a negatively stated item stem.
(4) Provide a response that competent critics can agree on as the best.
(5) Make all the responses appropriate to the item stem.
(6) Make all distractors plausible and attractive to examinees who lack the information or ability tested by the item.
(7) Avoid highly technical distractors.
(8) Avoid responses that overlap or include each other.
(9) Use "none of these" as a response only in items to which an absolutely correct answer can be given; use it as an obvious answer several times early in the test but use it sparingly thereafter; and avoid using it as the answer to items in which it may cover a large number of incorrect responses.
(10) Arrange the responses in logical order, if one exists, but avoid consistent preference for any particular response position.
(11) If the item deals with the definition of a term, it is often preferable to include the term in the stem and present alternative definitions in the responses.
(12) Do not present a collection of true-false statements as a multiple-choice item.

3. True-False Tests

In a true-false test you are given a choice of two answers, but only one can be right. These types of questions can be answered quickly and sometimes give you hints to answers in other parts of the test. True-false questions test your ability to tell what is correct or incorrect, to recognize a stated fact, to know a definition, or to identify a rule. True-false tests are also used to help you recognize fact from opinion.

a. Students

If you know that you are having a true-false test, you will have to know your facts well! When you study, ask yourself true-false questions. Even write some! Then, you will be better prepared to answer true-false questions on the test.

True-false Questions

These suggestions will help you deal with this type of question.

(1) Assume the question is true unless it can be established that it is false.
(2) It is usually easier to write a true question than a false one.
(3) A statement is false if any part of it is false.
(4) Absolute statements tend to be false. Be aware of the words "never," "always," none," "all," "best," "invariably." These statements are usually false. However, words such as "many," "most," "some," "generally," "frequently," and "often" are most often used in true statements.
(5) The word NOT completely changes the meaning of a statement. Be careful in answering this type of question. Usually the answer is the opposite of what seems to be obvious.
(6) If you are not sure what the question is asking, ask your teacher for clarification.
(7) It is all right to guess on a true-false question. You have a 50/50 chance of guessing the right answer.
(8) Keep in mind that first impressions are most generally correct.

b. Teacher

(1) Base true-false items only on statements which are true or false without qualifications.
(2) Avoid the use of long and involved statements with many qualifying phrases.
(3) Avoid the use of sentences borrowed from texts or other sources as true-false items.

4. Matching Tests

Tests with matching items usually give two lists of either facts or rules. You are asked to match or pair each of the words in the first list with a word, symbol, phrase or sentence in the second list. Answers are written using numbers or letters. They are usually given next to the word or words in the first list.

a. Students

(1) Leave the most difficult items until last.
(2) Try and find out if you can use one item more than once.
(3) Don't be fooled by words spelled similarly.
(4) Don't be misled by familiar words used out of context.

b. Teacher

(1) Group only homogeneous premises and homogeneous responses in a single matching item.
(2) Use relatively short lists of responses.
(3) Arrange premises and responses for maximum clarity and convenience to the examinee.
(4) The directions should clearly explain the intended basis for matching.
(5) Do not attempt to provide perfect one-to-one matching between premises and responses.

5. Short Answer Questions

Fill-in or completion-type items ask you to give the correct words, names, numbers, dates, or symbols missing from a statement that is not complete. There is usually a blank space either within the item or following it. This type of question is also used in objective-type tests. The answer is always short and specific.

a. Students

For short answer questions or fill-in-the-blank items, check with your teacher to see if spelling will count. If it does, study your material carefully and practice spelling words that are giving you trouble.

When doing short answer questions, read the question carefully. Write in your answer neatly so that the teacher can read it. If you are unsure of the answer, write down what you think the answer is. Put a check mark (√) by this question and come back to it later. You may remember the answer then. Sometimes a later question will give you a clue for a question you didn't know.

b. Teacher

(1) Use the short-answer form only for questions that can be answered by a unique word, phrase, or number.
(2) Do not borrow statements verbatim from context and attempt to use them as short-answer items.
(3) Make the question, or the directions, explicit.
(4) Allow sufficient space for pupil answers, and arrange the spaces for convenience in scoring.
(5) In computational problems specify the degree of precision expected, or, better still, arrange the problems to come out even except where ability to handle fractions and decimals is one of the points being tested.
(6) Avoid overmutilation of completion exercises. Do not take out key words.

6. Open Book Tests

Often students find the open book test the most difficult because they fail to study, hoping to rely on the book for their answers. However, this test demands just as much study; in fact, it is better if students do not <u>have</u> to rely on their books.

a. Students

The open book test has two features you should not overlook. (1) The teacher expects a more detailed and complete answer. (2) You must budget your time to be able to answer all of the questions.

b. Teacher
   (1) Remind students to bring their books and/or notes to class.
   (2) Warn students that you expect more explicit and detailed answers.
   (3) Let the students know the area to be covered and the type of responses you are seeking so they will not waste time.
   (4) Keep students aware of the time throughout the test so they will better manage their time.

7. Problem-Solution Tests

Problem-Solution tests are most often found in courses which deal with numbers--math, science, accounting, and computers. The problem is presented and the student arrives at a solution based on the information he has. The teacher may or may not allow the student to do practice work on the side. At any rate, often neatness is expected of the student.

a. Students

Problem-solution tests, however, may be found in courses, such as Home Economics or even Free Enterprise. The teacher presents a problem to the student and asks him to arrive at a solution and respond in a written answer which is not numerical. This response is based on analyzing the problem and coming to some conclusion based on his knowledge.

b. Teacher
   (1) Remind students to first ask themselves: What is the real question?
   (2) Stress the importance of rereading the question.
   (3) Let students know it is possible to take marginal notes.
   (4) Remind students to budget their time accordingly between questions.
   (5) Have students check their answers for transference errors.

8. Oral Tests

Oral tests are exactly what the name implies. They are tests which are given orally. Teachers in foreign languages, speech, and English classes use this method more often than others.

a. Students

The oral test often tests skills which can only be achieved by speaking and repeating phrases learned such as in foreign language classes. The teacher tests on the inflection of sounds as well as the correct response. It is also obvious that the speech teacher would use this method of testing, basing the student's score on poise, diction, enunciation, and knowledge of the material. In addition,

English teachers find oral testing useful in checking on material assigned. Points are given commensurate with the level of the question and the response. Recitation of poetry is another skill measured orally by English teachers.

b. Teacher
   (1) Students should be aware of the ways you will measure their achievement and what you expect of them.
   (2) Students should know the level of difficulty of questions which test their knowledge.
   (3) Students should be as concise as possible so as to avoid irrelevant material and wasting time.
   (4) Students should be made aware that body language, diction, enunciation, tonality, and voice resonance are measured in oral presentations.

B. Standardized Tests

Standardized tests measure students' abilities, their knowledge, performance, and skills. These tests are called standardized because they were prepared by experts in various fields. And since they have been given to a large population of students, experts have determined as closely as possible the patterns of responses.

National norms are achieved by giving the same tests to students throughout the country. Then the scores are compared and a norm is established. These norms cause the tests to be "standardized."

The purpose of standardized tests is to get a "scientific" measurement. Because scores are compared with scores throughout the nation, they are more valid and more reliable. However, since standardized tests are very general, it is difficult to study for them.

Many universities require students to take the SAT (Scholastic Aptitude Test) and/or the ACT (American College Test).

These tests help place students in various courses in college along with their GPA (Grade Point Average). Another standardized test students may take is the ASVAB (Armed Services Vocational Aptitude Battery) which is administered and scored by the Armed Forces. It helps students become aware of their abilities and vocational interests at no cost to the student. This is usually given to high school juniors.

The PSAT (Preliminary Scholastic Aptitude Test) is given to high school juniors to qualify them for the National Merit Scholarship. Seniors also may take the AP (Advanced Placement) test which places them in higher levels of courses in college. Students are invited by the universities and colleges to participate in this testing.

OBJECTIVES

The student will:

1. will have a knowledge of the subject matter, be able to organize his thoughts, and to express himself in a logical, concise and convincing manner.

2. choose the best or collect response to the question given based on his knowledge of the subject matter.

3. will determine what is correct or incorrect by recognizing a stated fact, definition, or identification of a rule.

4. will match words, phrases, or symbols that correspond from one list or set of choices to another.

5. will fill in the blank or complete the question by giving the correct word, phrase, number, date, or symbol.

6. will utilize his notes or text to answer selected questions found therein.

7. will use previous knowledge, logic, and or analytical skills to interpret, decipher, or solve word problems, algebraic expressions of other symbols that require decoding.

8. will be expected to recall and recite either short or long answers to questions posed by the teacher. Students may also be required to recite parts of or whole selections of poetry. Students may also be required to recite a selected word or phrase of a foreign language.

9. should know how to take various standardized tests and use principles of test-taking to achieve his best possible score. Students should be made aware of the different types of testing formats.

ANSWERING ESSAY QUESTIONS

Step 1. As you read each essay question, jot down the important first impressions and key terms. Make marginal notes for each question.

Marginal Notes

Competition bet. countries led to nationalism

Test Question

The fifteenth- and sixteenth-century voyages of exploration produced lasting changes in the political and social structure of Western Europe. Would you say that these voyages tended to hasten or to delay the growth of national states? Explain.

Step 2. Look over your notes and decide how you will order them in your essay. Place 1, 2, 3, etc. alongside each major idea. Use 1a, 1b, 1c, etc. to designate those points which will be used to support the first major idea; 2a, 2b, 2c, etc. for the second major idea, etc. Look for gaps in either the major ideas or their supporting materials, and insert brief notations into your notes.

Marginal Notes

2. Competition between countries led to nationalism

Test Question

The fifteenth- and sixteenth-century voyages of exploration produced lasting changes in the political and social structure of Western Europe. Would you say that these voyages tended to hasten or to delay the growth of national states? Explain.

3. No need for other countries for trade

3a-break Venetian Trade rts.
3b-Italy

2b Minerals (coffee, spices, etc.)

12

12

2a Wanted money and land

1 War

2c Cortez and Aztecs

1a-Unity festered from
2d-danger within

2. Underline the important words in the stem of each of the following multiple choice questions.

1. The most important skill that Stevie Wonder acquired as a blind youngster was
   a. to ride a bicycle
   b. to play the piano
   c. to read Braille
   d. to sing well

2. The Industrial Revolution has contributed to all but one of the following:
   a. a higher standard of living
   b. a movement to rural areas
   c. more rapid communication
   d. imperialism

4. Use common sense and clues from preceding rules to answer the following multiple choice questions. Circle the letter of the correct answer.

3. A monthly magazine devoted almost exclusively to keeping businessmen informed of events and trends is
   a. Time
   b. Fortune
   c. Newsweek
   d. Nation

4. The purposes of a chimney are to
   a. furnish a draft
   b. improve the architecture
   c. carry off smoke and gases
   d. a and c

5. You are driving and have a blowout. You should:
   a. slam on your brakes
   b. hold your steering wheel tight, and steer to stop on the shoulder
   c. keep going

6. It is 644 miles from Shreveport, Louisiana, to Carlsbad, New Mexico. How many days should you use in driving from Shreveport to Carlsbad?
   a. one half
   b. two
   c. five

7. The boss chews you out just before quitting time. You don't say much, but you think he is unfair and you are mad. When you get to your car you should:
   a. take a few minutes to cool off before you drive home
   b. play the radio loud so you won't think about it
   c. drive on the interstate so you can let off steam

PRACTICE EXERCISE: Place a + before all true statements and a 0 before all false statements.

_____ 1. The United States and French governments have always been on friendly terms.

_____ 2. Prices never go down when demand decreases.

_____ 3. Some of our greatest scientists have trained abroad.

_____ 4. Men have brown eyes.

_____ 5. All needles are used for sewing.

_____ 6. There are always 24 hours in a day.

Try a few more:

1. A test is the only way to determine how well you know a subject.

2. Many pioneers died in Death Valley because of the hot, humid climate.

3. There are some numbers larger than 1,000,000,000.

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4. In college football rules, after a second shift, all players must remain stationary for one full second prior to the snap.

5. "All men are not the same" is a false statement.

Example:

Directions: Write the letter of the planet in Column 2 next to the words that describe the planet in Column 1.

	Column 1	Column 2
__c__	earth's twin	a. Earth
__e__	closest to the sun	b. Pluto
__b__	farthest planet	c. Venus
__a__	third planet from the sun	d. Jupiter
__d__	largest planet	e. Mercury
		f. Mars

Answers to Matching Items also may be drawn from one list to the other. These lines connect the matching items.

Example:

Directions: What colors do you mix together in column 2 to get the colors in column 1? Draw a line to match the colors.

Column 1	Column 2
orange	red and white
	blue and green
pink	yellow and blue
	red and blue
purple	red and yellow
	yellow and white
green	green and yellow

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Most matching items do not have the same number of items in column 1 and column 2. This is one way to keep you from guessing about the leftovers. Sometimes, when the columns are even, the directions will tell you that answers may be used more than once, only once, or not at all. This is another way to keep you from getting answers by ruling out certain items in the column.

On a separate sheet of paper match up the following acronyms with their expanded words?

1.	_____ ZIP	a.	High Fidelity
2.	_____ MASH	b.	Junior College
3.	_____ BIOWAR	c.	Situation Normal; All Fouled Up
4.	_____ RIF	d.	Aluminum Company of America
5.	_____ SEATO	e.	Biological Warfare
6.	_____ NASA	f.	Mobile Army Surgical Hospital
7.	_____ SNAFU	g.	Congress of Racial Equality
8.	_____ ALCOA	h.	Reduction in Force
9.	_____ CORE	i.	National Socialist (German National Socialist)
10.	_____ NAZI	j.	National Aeronautics and Space Administration
11.	_____ JUCO	k.	Zone Improvement Program
12.	_____ HIFI	l.	Southeast Asia Treaty Organization

Example:

1. How many days are usually in a year? 365

✓ 2. What was the first battle of the Civil War?

3. What colors do you mix together to get green? (blue and yellow)

NOTE: Item #2 is checked because the student did not know the answer. If the student has time later, he/she can come back to it then. All other items were answered and are written neatly.

MORE PRACTICE

4. What is the capitol of Louisiana?

5. When was Louisiana admitted to the Union?

6. Which two families are feuding in Romeo and Juliet?

7. Who was the instigator in killing Julius Caesar?

8. What was Hamlet's quandary in his famous "To be or not to be" soliloquy?

9. Who was the only daughter of King Lear who really loved him?

10. What was McBeth's downfall?

CRAMMING vs A CONSISTENT STUDY PLAN

Many students wonder how to study for a test. Most of the "how to study" publications suggest a three or four day preparation period. If this time is interrupted, many students return to cramming the night before. Cramming or a short period of study does not increase long-term memory. Rapidly gained knowledge is not retained for any appreciable length of time. What is needed is the development of consistent study habits. A habit is a "usual way of acting: a custom, a practice." This year you have learned many study techniques. The following study flow chart incorporates those skills into a consistent study plan to promote the study habit. The activities described below include both classroom and homework. It is a way of learning.

STUDY FLOW CHART

GATHER MATERIAL

1. Listen attentively in class. Try to identify main ideas or concepts, facts that support concepts, and examples that explain them.

2. Take quality notes using the 1/3-2/3 format method with key words and/or recall questions. Use this for review later.

3. Use PREP when reading textbooks or any informational materials. It is important to take notes from these sources.

ORGANIZE MATERIAL

1. Rewrite or correct your notes. This should be done every evening while the day's learning activities are fresh in your mind.

2. Map or outline information from class notes or textbook notes. This reduces the amount of material to be reviewed.

3. Make study lists or use index cards for vocabulary words, math formulae, or important authors and characters.

4. Tape record important material and listen to it repeatedly.

TEST YOURSELF

1. Cover the 2/3d's section of your notes. Use the key words to recall questions and test yourself.

2. Two or three days before a test, make up a practice test. be sure and use a variety of questions: essay (short and long answer) and objective (true/false, multiple choice, matching, and fill-ins). For a practice math test, make sure you have included every possible type of problem or example.

PROMPT YOURSELF

1. Use the results of your practice test and review work to identify areas for further study.

2. If there is material that you do not understand, go to your teacher for further explanation.

3. Use the memory aids to help you master the material you are having difficulty with such as acrostics, acronyms, visualizations, linking, categorizing, and alphabetizing.

FINAL REVIEW

1. The night before the test, review those difficult areas.

2. Go to bed at your normal bedtime and eat a good breakfast using complex carbohydrates the following morning.

Answer the following questions:

1. What are the advantages and disadvantages of short and long term memory in studying for a test?

2. Explain the steps in effective study.

PROBLEM SOLVING

CONTENT: Decimals; Problem solving

OBJECTIVE: The student will be able to solve word problems involving the use of money.

ACTIVITIES: Solve the following.

a) Maria earned $32.75 and Juanita earned $42.60. How much more did Juanita earn than Maria?

b) Jane makes $5.35 an hour. How much would she earn in a forty hour week?

MEAT	
Hamburger	$1.79 lb.
Lamb Roast	1.95 lb.
Steak	3.49 lb.
Beef Liver	1.29 lb.
Polish Sausage	1.99 lb.

Directions: Use the table above to answer the questions below.

c) How much less per pound is lamb than steak?

d) If you bought a lamb roast for $5.97 and a pound of hamburger, how much change would you receive from a $10 bill?

e) Which costs less--two pounds of steak or three pounds of liver; a three-pound lamb roast or four pounds of hamburger?

4. Timed tests should be given to help students practice under pressure.
5. Students may research various self help texts to prepare themselves.
6. Teachers or Guidance Counselors should provide practice on the following sections:
   a. Timed essay writing
   b. Reading comprehension
   c. Sentence correction
   d. Usage
   e. Verbal ability
   f. Math ability
7. Students may also avail themselves of other materials available by testing companies, in computer software as well as texts.

The ACT Assessment Test Preparation Reference Manual for Teachers and Counselors is a valuable source. Furthermore, both testing companies themselves and commercial companies have developed materials, including computer software, useful for preparing students to take standardized tests. For example, the ACT Study Skills Assessment reveals areas of cognitive and behavioral strengths and weaknesses in six areas: Managing Time and Environment, Reading Textbooks, Taking Class Notes, Using Resources, Preparing for Tests, and Taking Tests. Individualized instructional programs for these six areas are available from ACT.

VIII. GRAPHIC SKILLS

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The constant advances in science and technology have made the acquisition of knowledge unbelievably difficult in that the information is often lengthy in scope and extremely technical in content. In order to make this information palatable or comprehensible, it is often presented in an abbreviated form, i.e., a graph or a chart.

The shrinking of the globe through rapid transmission of people and information has made it extremely important that a person be adept in reading maps accurately. This section will deal with charts, graphs, and maps. Charts, sometimes called tables are used to represent data in tabular form. Most often the information presented is in numerical form.

Graphs, on the other hand, are many and varied and each has a specific use and value. Bar graphs are used to represent discrete data. This is data of which the (usual) two variables are totally independent of each other. For example, a bar graph showing the rain fall for a particular week illustrates that the two variables do not have any effect on each other. The broken-line graph serves the same purpose as the bar graph.

The straight line graph is used to represent continuous data. This is a situation where the two variables affect each other. For example, a line graph shows the relationship between the number of gallons of gasoline purchased and the amount of that purchase. Note that as one variable increases (number of gallons), the other also increases (total cost).

Circle graphs are used to show the parts of a whole. Examples of these are frequently found in the newspaper. Often one can find a silver dollar cut into wedges to show government income or expenditures.

Pictographs are used to represent quantities or relationships. The data is usually discrete. Examples are easy to find in newspapers and newsmagazines.

COURSE OUTLINE	STUDENT OBJECTIVE	ACTIVITIES TO ACHIEVE STUDENT OBJECTIVES
	The student:	
A. Maps 1. Symbols a. Highway signs b. Railroads c. Airports d. Political boundaries e. Capitols f. Rest areas	1. Identifies the most commonly used map symbols.	1. Given a road map of Louisiana, students will find the specific symbols discussed and reviewed in the contents. 2. Given a map of Louisiana, students will: . identify the five largest cities . find the distance between New Orleans and Alexandria; Lafayette and Lake Charles, etc. . draw an approximate line across the state to show the change in elevation from below sea level to above sea level . find the highest point of elevation in Louisiana
2. Legends a. Distance scales b. Elevation c. Population d. Land formations	1. Uses map legends to determine distance between sites, population size, elevation and land formation.	1. Given a weather chart, students will identify highs, lows, precipatation outlooks for five major United States cities.
B. Charts	1. Answers specific questions related to charts.	1. Given a table of Louisiana college enrollment, students will identify which points in the state have the highest concentration of public college students and which have the lowest.
C. Graphs a. Bar b. Broken-line c. Straight line d. Circle e. Pictographs	1. Answers questions based on information presented within the various graph types.	1. Consider each graph on the activity sheets, then answer the questions which pertain to them.

VIII. GRAPHIC SKILLS RESOURCES

CHART ACTIVITY I

CITY	HIGH	LOW	PREC.	OUTLOOK
Atlanta	82	64	0	Clr
Buffalo	80	60	60	Cdy
Houston	80	71	10	Cdy
New Orleans	80	71	90	Cdy
Phoenix	104	76	0	Cdy

1. Which of the five cities have the greatest chance of rain?
2. If you were planning to play golf, to which city or cities would you go?
3. Which city had the greatest high? low?
4. What is the range of the high? lows?

CHART ACTIVITY II

LOUISIANA'S PUBLIC COLLEGES AND UNIVERSITIES

Institution	Enrollment
LSU	27,295
LSU-Alexandria	2,021
LSU-Eunice	1,720
LSU-Shreveport	4,359
LSU-Medical Center	2,139
UNO	10,109
LSU Law Center	726
Southern Baton Rouge	9,484
SU-New Orleans	3,370
SU-Shreveport	848
Delgado New Orleans	8,453
Grambling-Ruston	5,475
La. Tech-Ruston	10,093
McNeese-Lake Charles	7,471
Nicholls State-Thibodeaux	7,091
Northeast-Monroe	10,201
Northwest-Natchitoches	6,091
Southeastern-Hammond	8,176
USL-Lafayette	15,412

1. Which university system has the greatest enrollment? How many?
2. Using a map of Louisiana, show where the state colleges are located.
3. With the same map show where the greatest concentration of college students is located.
4. How many college students are there north of Alexandria (including Alexandria)? How many south of Alexandria (excluding Alexandria)? How many in the entire state?

Chart Activity # II.

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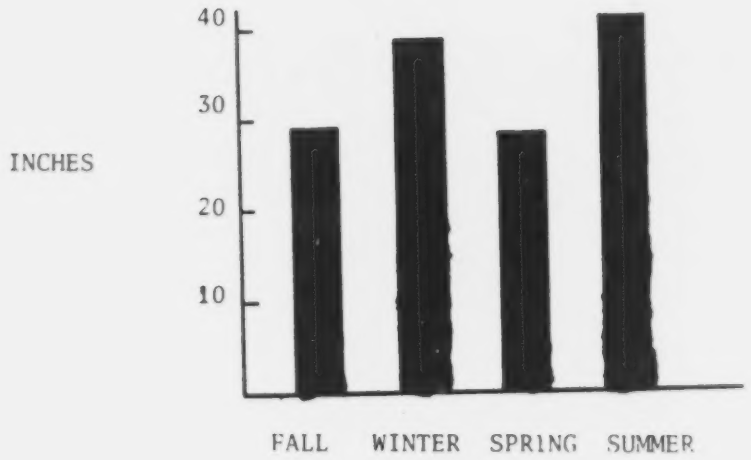
GRAPH #1.

SEASONAL PRECIPITATION



1. Which season of the year has the greatest precipitation?
2. Which season has the least?
3. What is the total annual precipitation?

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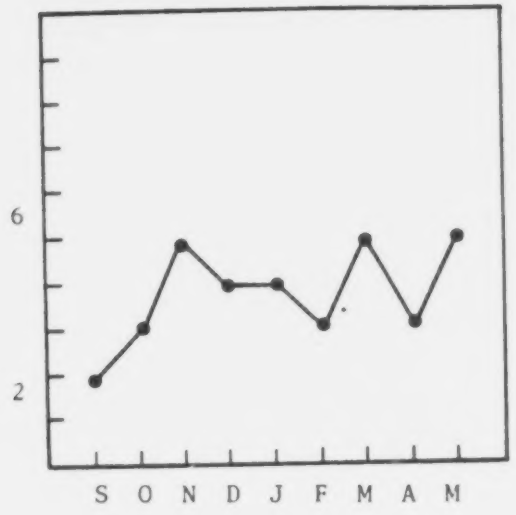
GRAPH #2.

NUMBER OF SCHOOL DROPOUTS

STATE OF LOUISIANA



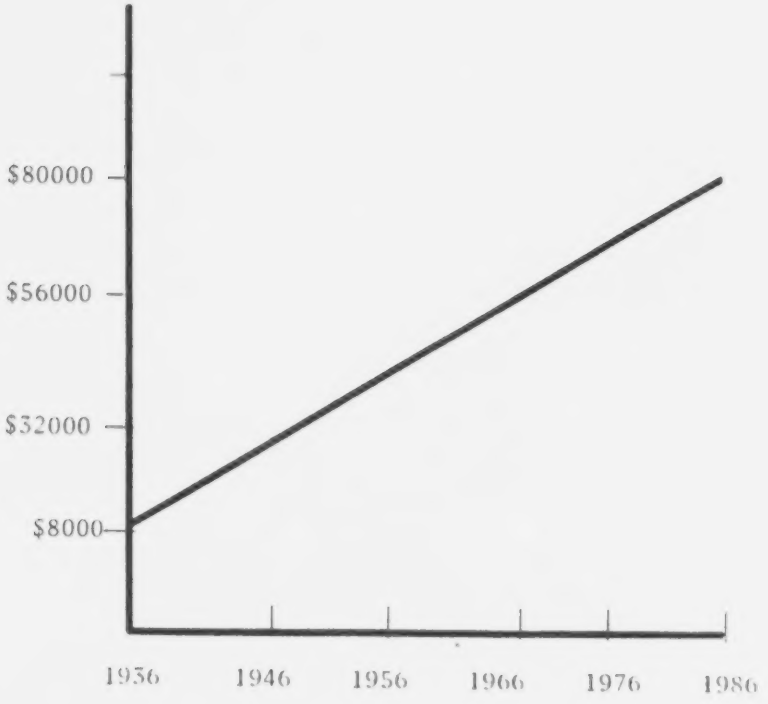
MONTHS OF SCHOOL YEAR

1. Which month(s) has/have the largest number of dropouts?
2. Which month has the least?
3. What is the total number of dropouts during one school year?

75

GRAPH #3.

1936 Mercedes-Benz Appreciation



76

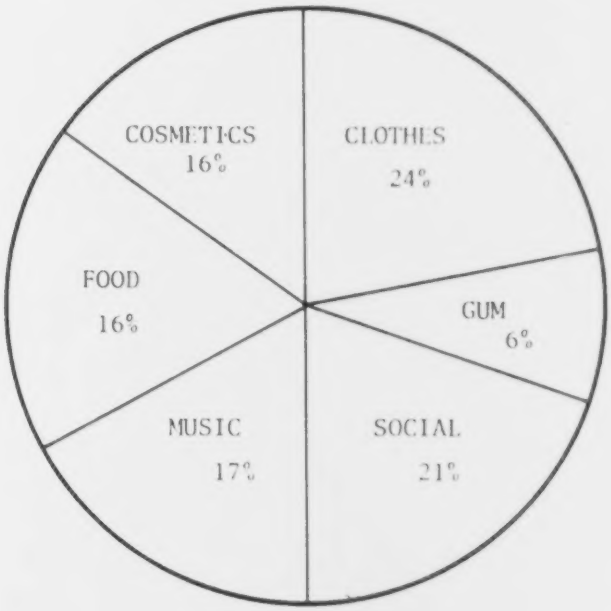
1. What was the approximate value of tee car in 1946? 1976?

2. What is the difference between the purchase price and the last quoted value?

3. Based on this graph, predict the probable value of the car in 1996.

GRAPH #4.

TEENAGE EXPENDITURES



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1. Which is the largest expense category?

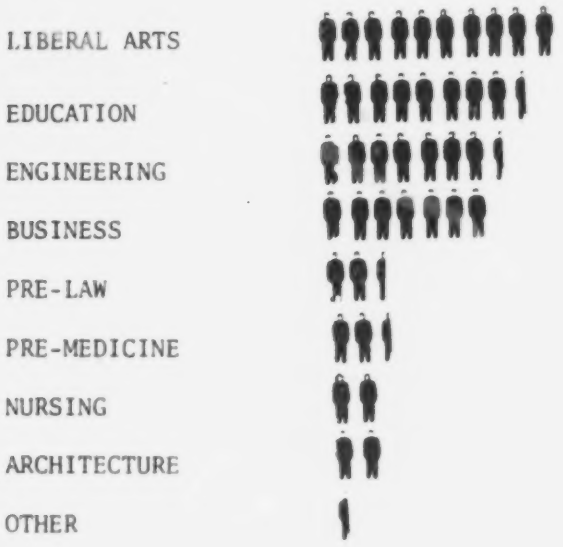
2. Which is the smallest category?

3. What is the ratio of money spent on gum to money spent on clothes?

4. If this person had $100 to spend, how much would be spent in each category?

GRAPH #5

COLLEGE MAJORS IN LOUISIANA



Each figure represents 3500 students.

1. What is the number of college students in Louisiana?
2. How many students are studying to be teachers?
3. How many more are in liberal arts than in education?
4. How many are planning to be doctors and lawyers?

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IV. WORD ROOTS AND DICTIONARY SKILLS

IX. WORD ROOTS AND DICTIONARY SKILLS

Every student must demonstrate vocabulary recognition in every content area. Standardized tests, especially, force the student to possess a strong background in vocabulary, and the best way to improve vocabulary that is not tied to a specific subject is by building root recognition.

Dictionary use is a general skill that will be needed continually by everyone in school and later in life; however, seldom are all of the elements of the dictionary explained by teachers, thereby reducing dictionary use by students. In addition, a brief familiarity with the advantages and limitations of a thesaurus is recommended as an adjunct to dictionary skills.

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
A. Dictionary		
1. Types of dictionaries	1. Describes the two main types of dictionaries.	
a. Unabridged		
b. Abridged		
2. Parts of dictionary	1. Describes the parts of a dictionary and what information may be found within each.	1. Open dictionarys to Content page. Refer to each section as necessary to explain function and content of each.
a. Guide		
b. Style		
c. Pronunciation key		
d. Entries		
e. Biographical list		
f. Geographic list		
g. Abbreviation		
h. College list		
3. The Guide	1. Uses dictionary entries effectively.	1. Open the Guide and address each subject as it is explained in the Guide. Evaluate simultaneously by spot-checking examples in the dictionary proper.
a. Guide words		
b. Alphabetical order		
c. Superscript numerals		
d. Syllabication		
e. Pronunciation		
f. Part-of-speech labels		
g. Inflected forms		
h. Labels		
i. Cross-reference		
j. Order of Definitions		
k. Sense division		
l. Explanatory notes		
m. Illustrative examples		
n. Variants		
o. Modifiers		
p. Idioms		
q. Etymologies		
r. Undefined forms		
s. Usage notes		
t. Synonyms		

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
4. Practice in using the dictionary	1. Gains experience in using the dictionary for a number of different tasks.	1. Play the Dictionary game (attached) in small groups.
5. Etymological relation a. Source 1) Greek 2) Latin 3) French 4) German 5) Italian 6) Spanish 7) Arabic 8) American Indian 9) Other b. Historical influences c. Cultural influences	1. Demonstrates how relationships to other languages has shaped American English.	1. Send students on a lexicographic scavenger hunt: find four or five words from each language mentioned as an influence. 2. Ask students to speculate historical or cultural drives that contributed to foreign word use in English. 3. Compare dates that various words entered the language, inferring a reason or pattern for entry. 4. Compile a list of synonyms or near-synonyms in English from various source languages. What specialized meanings do some have? What shades of meanings or connotations do they have?
B. Word Roots 1) Greek 2) Latin	1. Points out the root contained in a set of given words; to offer insight into basic meaning; to show relationships to words sharing that root.	1. Teach most common Greek and Latin word roots: map "families" on board; teach common prefixes and suffixes; give regular practice in using context clues.
C. Thesaurus	1. Locates synonyms for a specific term and offers suggestions as to appropriateness of synonyms provided.	1. Describe synonyms as imperfect. Why? What is the difference (firm, stubborn, pig-headed)? What happens when two languages fight for dominant form (beef/cow, mutton/sheep)?

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
		2. Discuss stylistic considerations of appropriateness (officer, cop, pig).
		3. Give practice in locating synonyms that meet some off-the-wall criterion (rhymes, initial letter).
		4. Use synonym list in dictionary entries if thesauruses are unavailable.

IV. WORD ROOTS AND DICTIONARY SKILLS RESOURCES

DICTIONARY GAME

Have students break into small (6 player) groups. Have a student in each group secretly find an odd or obscure word that no one in the group would know. That student announces the word, but not the definition to the others in the group. Each of the players writes down a definition that sounds right for the word, while at the same time the chooser of the word writes down the correct definition. All slips of paper are collected and read anonymously by the leader, who has mixed his correct definition in with the pretenders. Players earn points if they receive votes from the other players for their fictional definition. Leadership rotates to the next player, and the process is repeated.

X. LIBRARY SKILLS

X. LIBRARY SKILLS

The mark of the successful person of the future is not that of one who has a vast amount of information, but that of one who knows how to access any information. At this time it is extremely important that basic library or research skills be made available to all students. Much of what is presented here is dealt with on a very traditional "search for" basis. It is evident that in a few years this search will shift from a physical "prowling" of the reference section of a library to a computer "prowl."

Anyone teaching study skills will do well to involve the school librarian in the course.

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
A. Dewey Decimal System	1. Identifies the major components of the Dewey Decimal System.	1. Students prepare a diagram of the library showing where the different Dewey Decimal sections are located as well as the location of the card catalog.
B. Reader's Guide to Periodical Literature	1. Finds specific articles in the Reader's Guide.	1. Assign each student a specific topic, such as planaria or Peace Corps, and have them find at least five periodical sources of information on the topic.
C. Card Catalog	1. Identifies the types of headings used in the Card Catalog.	1. Devise a "Topic Hunt" based on trivia material, using the Card Catalog.
D. References	1. Identifies major topics using at least five reference materials.	1. Assign individual topics where the student needs to find five different reference sources.
E. Audio-visual 1. Microfiche 2. Microfilm 3. Audio and video cassettes	*1. Accesses the AV material available in the school.	1. Students demonstrate the operation of all AV equipment.

*May not be available in all schools.

XI. CRITICAL THINKING SKILLS

XI. CRITICAL THINKING SKILLS

Critical thinking is the kind of thinking students do when they subject incoming information and ideas to scrutiny. As new information comes to them, they must assess it carefully for accuracy, examine it from different angles, evaluate its sources for bias and distortion, and judge it according to norms and standards. Therefore, this unit should increase the students' ability to ask questions, distinguish fact from opinion, draw inferences and make judgments. Additional emphasis should be placed on the ability to write effective thesis statements based on arguments.

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES *
	The student:	
A. Importance of Critical Thinking 1. Maintenance of democracy a. Detects unprincipled speakers b. Detects professional persuaders 2. The "Critical Thinker" a. Evaluates data collected b. Distinguishes fact from opinion c. Notes bias in opinion d. Evaluates sources of data	1. Detects the purpose intended by the author.	1. Present a few paragraphs (selected from several school textbooks, local newspapers) and list below each selection three or four statements of purpose, of which only one is correct. Discuss the reasons why only one is correct. Questions such as "Why did the author write that?" "Why did the speaker say that?" "What is the main point the person is trying to get across to me?" Letters-to-the-editor, advertisements, reviews of records and films, stories and poems, and listening to video-taped speeches offer excellent opportunities for students to use this basic critical reading-listening skill.
B. Critical Thinking Processes 1. Two types a. Critical listening b. Critical reading 2. Steps involved a. Assesses for accuracy b. Examines opposing view points c. Evaluates for bias/ distortion d. Judges according to norms/standards	1. Judges sources (qualifications) of the speaker/writer.	1. To help students distinguish relevant from irrelevant information, give them a list of items and have them cross out those which do not belong to the topic. Higher level students should be encouraged to collect paragraphs from their textbooks which seem to include irrelevant sentences and share them with the class. "Why do you think the sentences were included?" At this point, students could be introduced to the nonsequitur--an inference or conclusion not based on evidence provided--and encouraged to discover examples in their outside reading.

*Note: Each succeeding activity reinforces the skills previously learned.

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
3. Tasks emphasis of exercises used a. Detects purpose b. Judges sources c. Detects bias/slanted language	1. Detects bias/ slanted language usage.	1. To evaluate sources students could be presented a list of prominent personalities. Ask the students to match an area of expertise with each name given. Ask such questions as "Why didn't you match 'Muhammed Ali' with 'rock music' or 'Billy Joel' to 'baseball'?" This can lead to the discussion of credentials, i.e., qualifications of the source. Various volumes of a biographical dictionary and other special references can be introduced for students to utilize in evaluating sources. 2. Ask students to write on a topic from various points of view. For example, write/speak from the viewpoint of a parent of a student athlete on probation, an "A" student, a school board member facing re-election, etc., on the following topic: Students not maintaining a "C" average overall should not be allowed to participate in extra-curricular activities. 3. To recognize bias or slanted language show the students how words tend to form a positive-neutral-negative connotation; for example, thin/ skinny, overweight/fat, statesman/ politician, policemen. Have students suggest as many synonyms as possible for certain words. List these under "Positive," "Neutral," "Negative," on the chalkboard according to student wishes.

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
d. Differentiates emotive and opinion	1. Recognizes emotive language.	1. Have students bring examples of articles which contain emotionally charged words. For example, "Appearing in a rumpled suit and loosened tie, Congressman Looseanna stated, "My opponent has socialist ways of thinking." Which words reveal the speaker's or writer's bias? What is his/her bias?
	2. Distinguishes fact from opinion.	1. Give students a mixed list of statements which require them to distinguish between factual statements (verifiable by someone else) and those that express opinions, feelings, and preferences.
e. Recognizes and evaluates inferences	1. Recognizes and evaluates inferences.	1. Have students analyze the following: A strange man came into our room, stomped over to the window and said, A. "There are black clouds in the sky." B. He paused and said, "It'll rain soon." C. Then, as he exited, he said, "This part of the country has lousy weather." (ASK) Fact: Which can actually be verified or checked by one of us? (ASK) Opinion: Which is simply an expression of the man's opinion or feeling? (ASK) Inference: Which is his prediction, or educated guess?

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
		2. Have students locate inferential statements and bring these to class for analysis. Guide questions may include: What factual statements are needed to support the inference? Who seems to be making this "educated guess?" What do you know about the inference maker? Is he or she experienced in the field?
f. Evaluates propaganda	1. Evaluates propaganda	1. Class discussion of "propaganda" should begin by establishing the nature of propaganda. For example, leading questions, such as the following are useful in stimulating discussion. A. What comes to your mind when you hear the word "propaganda"? B. Is propaganda ever truthful? C. Is propaganda ever untruthful? D. Is propaganda ever one-sided? E. Does propaganda ever present more than one side of the story? F. Should propaganda be used? Explain. G. Is propaganda ever helpful? H. Is propaganda harmful?
		2. After establishing the nature of propaganda with your students, introduce the most commonly used techniques, i.e., "bandwagon," "repetition," "transfer," "testimonial," "exigency," "free" and "bargain," "glittering generality," "innuendo," "namecalling," "card-stacking," "snob-appeal," and "emotional (loaded) words."

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
	The student:	
		As a follow-up activity, have students locate one example of each of the techniques utilized in either television, newspaper, magazine, or other media forms.
		3. Have each student design an advertisement which illustrates one of the techniques. Do not reveal the technique to other members of the class. After proofing, have the student present (on poster) his/her ad to the class to discern the students' ability to recognize each form.
g. Evaluates arguments	1. Evaluates arguments	1. Have students write argumentative thesis statements based on the following suggested topics: (Have them give at least two good arguments for each side of the question.) A. Should students be allowed to chew gum in school? B. Should every child aged seven or over be given a set weekly allowance to spend as he pleases? C. Should we have a law stating that parents be held financially responsible for the acts of their kids until they reach the age of 18? D. Should a student's grade be based on effort as well as achievement?
		2. Build the following questions into all classroom assignments: (See Resources)

COURSE OUTLINE	STUDENT OBJECTIVES	ACTIVITIES TO ACHIEVE OBJECTIVES
		--Dr. Thomas Devine in Teaching Study Skills: A Guide for Teachers recommends that the questions either be duplicated for student notebooks or posted in a prominent place in the classroom.

XI. CRITICAL THINKING SKILLS RESOURCES

Critical Thinking Guide

1. Has the speaker-writer used loaded or emotionally-charged words? What are they?
2. Is he or she a good source of ideas and information on this subject? Have you checked his or her credentials? What are they?
3. Which statements are clearly factual? Clearly opinion? How can you tell?
4. Does the speaker-writer seem to be deliberately trying to arouse your emotions? What are some examples of his or her emotive language?
5. Which statements are clearly inferential? Is there evidence in the talk or writing to support these inferences?
6. Has the speaker-writer referred to experts by name or are the references based on hearsay evidence ("They say" or "Research proves")?
7. Is the speaker-writer biased? How do you know?
8. What assumptions are implied by his or her statements? What are they?

EVALUATIVE TECHNIQUES

Students in grades 7-10 are developing into young adults, and are at different levels of development. Differences in physical and mental growth, opportunities, experience, and age affect a student's performance in the classroom. Evaluation should always take these differences into account. As with learning styles, evaluation should address the student's testing ability. In Dynamics of Effective Study, emphasis is placed on interdisciplinary skills, e.g., outlining, general library, notetaking, and test-taking. These skills cover a wide variety of topics which are applicable to several, perhaps all, content areas. This course allows the content area teacher to enrich, adapt, or support these skills, rather than to take valuable time from his subject matter to introduce them.

Evaluation of students should be based on more than a score or a single observation. Evaluations should include many different methods, each addressing the various learning and testing styles of students, and each aimed at assessing all taxonomic levels. Evaluation is the first sign of what is expected of the students by the teacher; therefore, initial evaluations should set the standard for the remainder of the course. The evaluation should reflect the performance objectives. Methods for evaluating pupil achievement and progress are an integral part of the instructional program. Evaluation techniques must reflect (1) the objectives to be reached, and (2) the activities employed to reach those objectives. If the objectives are stated clearly, the methods of evaluation are indicated within the objective. In this guide, the objectives are stated in behavioral terms and suggested activities are listed. The process skills are not identified because the skills will vary according to the manner in which the objective is taught. For every objective, it is clear what the student is expected to be able to do after successful completion of the learning activity designed to correlate with the objective. The successful attainment of an objective can be demonstrated by the student's being able to do specific things which can be observed.

One method of evaluation includes problem solving. Students should be required to gather data or information on which to base their response. These data or information should be presented in an appropriate manner for interpretation. Students may be evaluated on their interpretation and presentation.

Another method of evaluation includes paper and pencil tests. Students may be asked to analyze or interpret data. These interpretations may be evaluated as to how their responses were derived. Pencil and paper tests may be used to identify concepts, words, and ideas associated with objectives. Although essay questions are most effective for students who can write well, essay tests should be included in the testing experience of all students.

Performance and participation coupled with observed behavioral changes may also be an excellent method of evaluation. This type of evaluation may be used when simulation exercises are used. Students are assigned "parts" or "roles." These "roles" may have alternative views about how a problem might be solved. The students are asked to research their views and present their ideas and information before the class, much like a hearing. Following the "mock" hearing, the students may be tested with a paper and pencil test. Such

activities promote the use of process skills and tend to move the learner into the center of learning, rather than to keep the teacher at the center of the instruction. Therefore, evaluation should consist of more than just paper and pencil tests on recall of factual knowledge. A variety of evaluative activities should be used.

Evaluation is a key in documenting success or need for improvement. Collecting test data, observations, and analyzing such data should encourage a teacher to evaluate his own progress.

RESOURCE MATERIALS

Bragstad, B. J. and Stumpf, S. M. A Guide for Teaching Study Skills and Motivation. Boston: Allyn and Bacon, Inc., 1982.

General philosophy and lots of handouts; perforated pages make exercises camera-ready for photocopying; very useful.

Christen, William L., Welch, Larry L., and Elliot, Debra J. Developing Study Skills. Dubuque, Iowa: Kendall/Hunt Publishing Company, 1984.

Christen, William L., Welch, Larry L., Elliot, Debra J., and Atwood, Karen J. Building Study Skills. Dubuque, Iowa: Kendall/Hunt Publishing Company, 1984.

Christen, William L., Campbell, Norma L., and Mateja, John A. Learning Study Skills. Dubuque, Iowa: Kendall/Hunt Publishing Company, 1985.

Well designed for grades seven, eight, and nine, although may be shifted down one grade level. Many good student exercises, student workbook available.

Devine, Thomas J. Teaching Study Skills: A Guide for Teachers. Boston: Allyn and Bacon, Inc., 1981.

Super guide for the classroom teacher; easy to read; contains "Idea Boxes" with lists of practical suggestions for each area discussed. THE BEST!

Harnadek, Anita. Critical Thinking Book 1. California: Midwest Publications, Inc., 1976.

Useful for teaching critical analysis of information, fallacies, and introductory symbolic logic; breakdown of exercises helpful--class introduction, discussion problems, and chapter review--all distinctly laid out.

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